VALUE-ADDED PROCESSING OF DAIRY MANURE USING VERMICOMPOSTING

Composting of livestock manure can significantly reduce odors, along with volume and weight. Using worms to further improve compost quality can add value in an energy-efficient manner and permit exporting of the vermicompost off the farm and out of critical watershed areas. Also, worm castings contain up to 5 times the plant-available nutrients found in average potting soil mixes. To realize the potential energy, environmental and cost-saving benefits of vermicomposting, farmers need information to evaluate the energy, labor, land and equipment costs.

The goal of this New York State Energy Research and Development Authority (NYSERDA) project is to develop and operate a full-scale manure vermicomposting system to convert the solid fraction of manure produced at a 500-cow dairy to a marketable vermicompost. The project design builds on previous experience with a small pilot vermicomposting system. The expanded operation is successfully operating and market development work continues. Project monitoring data are now being analyzed to assess energy and economic impacts.

Anticipated benefits include: reducing nutrient loading into ground and surface waters from the land application of manure; reducing energy costs associated with hauling and spreading wet manure; creating an alternative product (vermicompost); and enhancing farm profits and offsetting the cost of system operation by marketing this value-added product.

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